

CLAIMS

1. A method for allocating channel resources in a radio communication system (SYS1), the method comprising:

receiving (301) a request for allocation of a channel resource;

5 allocating (302) a specific channel resource (C11-C88) according to a predetermined rule which includes considering an estimate of when said specific channel resource will be released and estimates of when other previously allocated channel resources will be released.

10 2. A method according to claim 1, wherein said radio communication system is a Code Division Multiple Access based system and said channel resources are spreading codes.

3. A method according to claim 2, wherein said spreading codes are Orthogonal Variable Spreading Factor codes (C11-C88).

15 4. A method according to any one of claims 2-3, wherein said channel resources include at least two higher level channel resources (C41, C42), said higher level channel resources being associated with at least two lower level channel resources each (C81-C82, C83-C84) such that a higher level channel resource
20 (C41) is available for allocation only when all lower level channel resources (C81-C82) associated with said higher level channel resource also are available for allocation, said lower level channel resources having higher spreading factors than said higher level channel resources.

25 5. A method according to claim 1, wherein said channel resources are hierarchically organized and include at least two higher level channel resources, said higher level channel resources being associated with at least two lower level channel resources each such that a higher level channel resource is available for
30 allocation only when all lower level channel resources associated

with said higher level channel resource also are available for allocation.

6. A method according to any one of claims 4-5, wherein according to said predetermined rule,

5 if at least two lower level channel resources are available candidates for allocating as said specific channel resource,

and if said available candidates include both a first and a second subset of lower level channel resources, wherein said first and second subsets include at least one lower level channel resource each, and each lower level channel resource in said first subset is associated with a higher level channel resource which is currently available for allocation while each lower level channel resource in said second subset is associated with a higher level channel resource which is currently not available for allocation,

a lower level channel resource in said second subset is selected as said specific channel resource.

7. A method according to claim 6, wherein according to said predetermined rule, if said second subset includes at least two lower level channel resources, said predetermined rule includes comparing estimates for when the higher level channel resources associated with the lower level channel resources in said second subset will become available for allocation with the estimate of when said specific channel resource will be released.

8. A method according to claim 7, wherein according to said predetermined rule, if said second subset includes both a third and a fourth subset, wherein said third and fourth subsets include at least one lower level channel resource each, and each lower level channel resource in said third subset is associated with a higher level channel resource which is estimated to become available at the same time or after the estimated release of said specific channel resource while each lower level channel resource

in said fourth subset is associated with a higher level channel resource which is estimated to become available before the estimated release of said specific channel resource,

5 a lower level channel resource in said third subset is selected as said specific channel resource.

9. A method according to claim 8, wherein according to said predetermined rule, if said third subset includes at least two lower level channel resources,

10 a lower level channel resource in said third subset which is associated with a higher level channel resource whose estimated time of becoming available for allocation is closest to the estimated time of release of said specific channel resource, is selected as said specific channel resource.

15 10. A method according to claim 7, wherein according to said predetermined rule, a lower level channel resource in said second subset which is associated with a higher level channel resource whose estimated time of becoming available for allocation is closest to the estimated time of release of said specific channel
20 resource, is selected as said specific channel resource.

11. An apparatus (RH1) for allocating channel resources in a radio communication system, said apparatus comprising:

25 electronic circuitry for receiving a request for allocation of a channel resource;

electronic circuitry for allocating a first channel resource according to a predetermined rule which includes considering an estimate of when said first channel resource will be released and estimates of when other previously allocated channel resources
30 will be released.

12. An apparatus according to claim 11, wherein said radio communication system is a Code Division Multiple Access based system and said channel resources are spreading codes.

13. An apparatus according to claim 12, wherein said spreading
5 codes are Orthogonal Variable Spreading Factor codes (C11-C88).

14. An apparatus according to any one of claims 12-13, wherein said channel resources include at least two higher level channel resources (C41, C42), said higher level channel resources being associated with at least two lower level channel resources each
10 (C81-C82, C83-C84) such that a higher level channel resource (C41) is available for allocation only when all lower level channel resources (C81-C82) associated with said higher level channel resource also are available for allocation, said lower level channel resources having higher spreading factors than said
15 higher level channel resources.

15. An apparatus according to claim 11, wherein said channel resources are hierarchically organized and include at least two higher level channel resources, said higher level channel resources being associated with at least two lower level channel
20 resources each such that a higher level channel resource is available for allocation only when all lower level channel resources associated with said higher level channel resource also are available for allocation.

16. An apparatus according to any one of claims 14-15, wherein
25 according to said predetermined rule,

if at least two lower level channel resources are available candidates for allocating as said specific channel resource,

and if said available candidates include both a first and a second subset of lower level channel resources, wherein said
30 first and second subsets include at least one lower level channel resource each, and each lower level channel resource in said first subset is associated with a higher level channel resource

which is currently available for allocation while each lower level channel resource in said second subset is associated with a higher level channel resource which is currently not available for allocation,

- 5 a lower level channel resource in said second subset is selected as said specific channel resource.

17. An apparatus according to claim 16, wherein according to said predetermined rule, if said second subset includes at least two lower level channel resources, said predetermined rule includes
10 comparing estimates for when the higher level channel resources associated with the lower level channel resources in said second subset will become available for allocation with the estimate of when said specific channel resource will be released.

18. An apparatus according to claim 17, wherein according to said
15 predetermined rule, if said second subset includes both a third and a fourth subset, wherein said third and fourth subsets include at least one lower level channel resource each, and each lower level channel resource in said third subset is associated with a higher level channel resource which is estimated to become
20 available at the same time or after the estimated release of said specific channel resource while each lower level channel resource in said fourth subset is associated with a higher level channel resource which is estimated to become available before the estimated release of said specific channel resource,

- 25 a lower level channel resource in said third subset is selected as said specific channel resource.

19. An apparatus according to claim 18, wherein according to said predetermined rule, if said third subset includes at least two lower level channel resources,

- 30 a lower level channel resource in said third subset which is associated with a higher level channel resource whose estimated time of becoming available for allocation is closest to the

estimated time of release of said specific channel resource, is selected as said specific channel resource.

20. An apparatus according to claim 17, wherein according to said predetermined rule, a lower level channel resource in said second
5 subset which is associated with a higher level channel resource whose estimated time of becoming available for allocation is closest to the estimated time of release of said specific channel resource, is selected as said specific channel resource.

21. A radio network controller node for use in a radio
10 communication system including an apparatus according to any one of claims 11-20.

22. A radio access network including an apparatus according to any one of claims 11-20.